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# 1 Introduction to DeepFake Technologies

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## 1.1 INTRODUCTION

The current era can be explicitly characterized by digital dominance, where the creation, communication, and dissemination of information are digitally driven. It has raised an alarming and challenging condition of trust and verification of the digital content available for the citizens. AI is a paradigm-shift technology due to its diverse utilitarian functions exhibited in the past years.

The subfield of AI is Deep Learning (DL), which plays a massive role in developing many applications. The catchphrase DF originates from the concealed innovation, i.e., profound realizing—a sort of AI [1]. DF technology is revealing a different age of media production. Like all the other technologies, both constructive and dangerous use cases happen.

As the name suggests, DL be taught from a sizeable amount of data and has many (deep) levels that facilitate learning. Similar to how humans learn from experience, the DL algorithm would repetitively carry out a task, each time adjusting it to enhance the outcome. DL permits machines to unravel complicated problems for disparate, unstructured, and inter-connected datasets. The performance of algorithms depends on in-depth learning. DL has sophisticated capabilities to create or alter images, scripts, and expressions exceedingly practically.